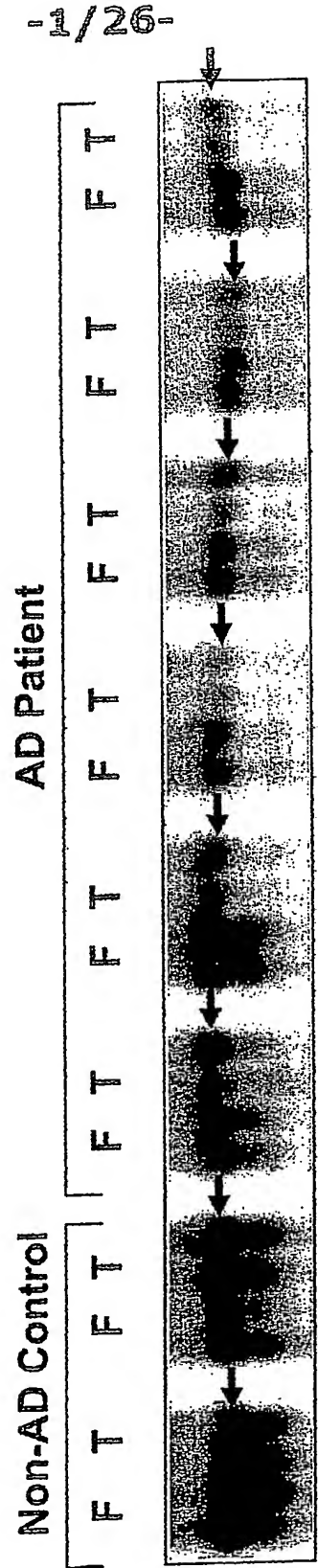


Fig. 1: Identification of differentially expressed genes in a fluorescence differential display screen



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Fig. 2: Verification of differential expression of SULT4A1 splice variant 1 and/or splice variant 2 by quantitative RT-PCR

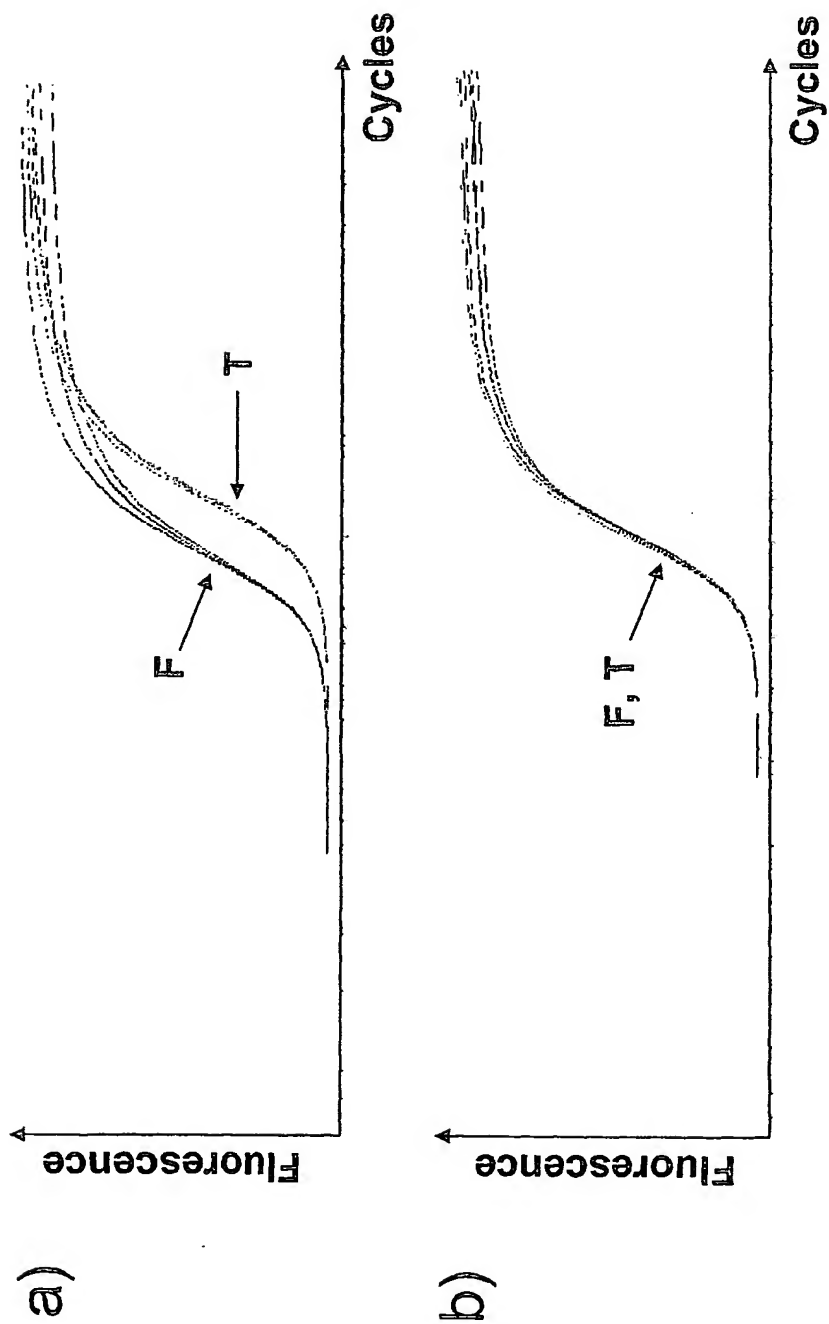
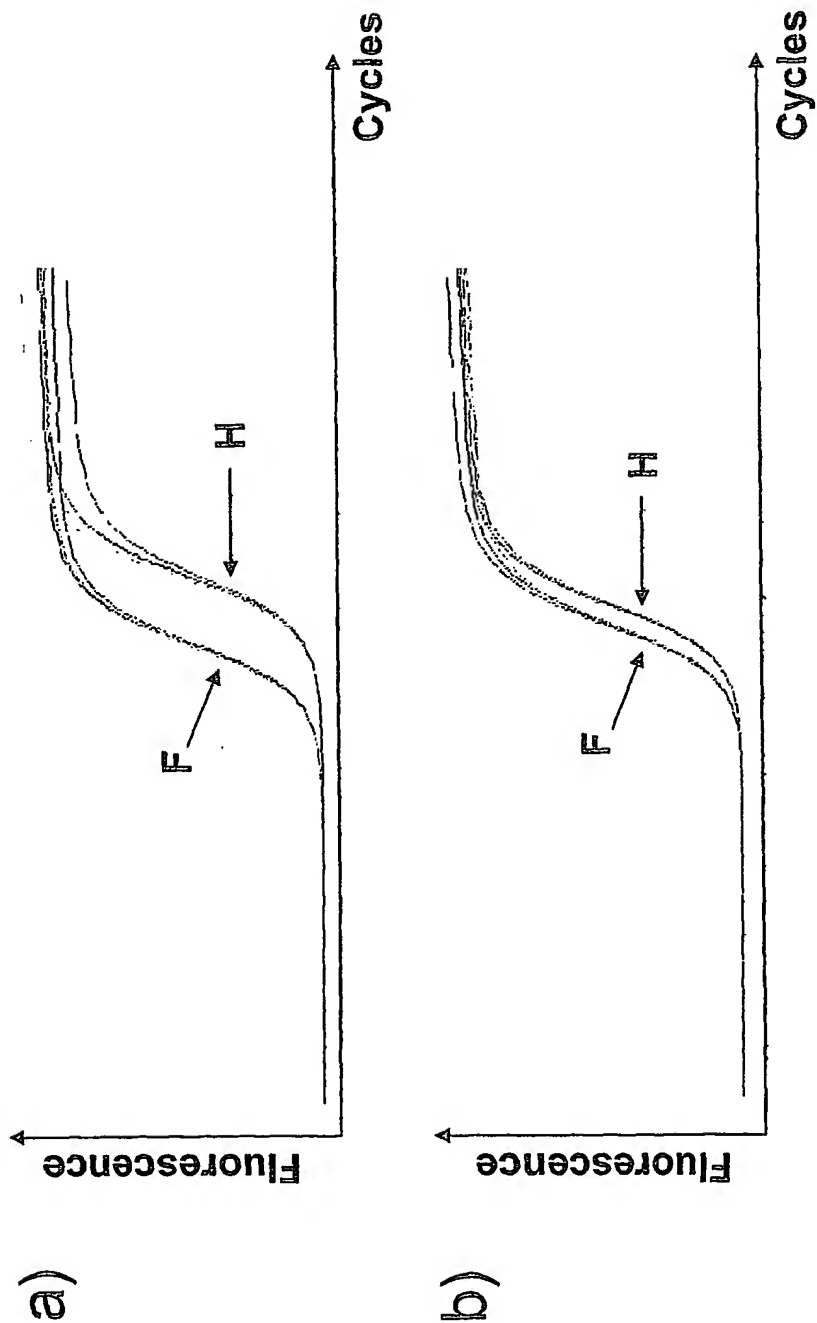
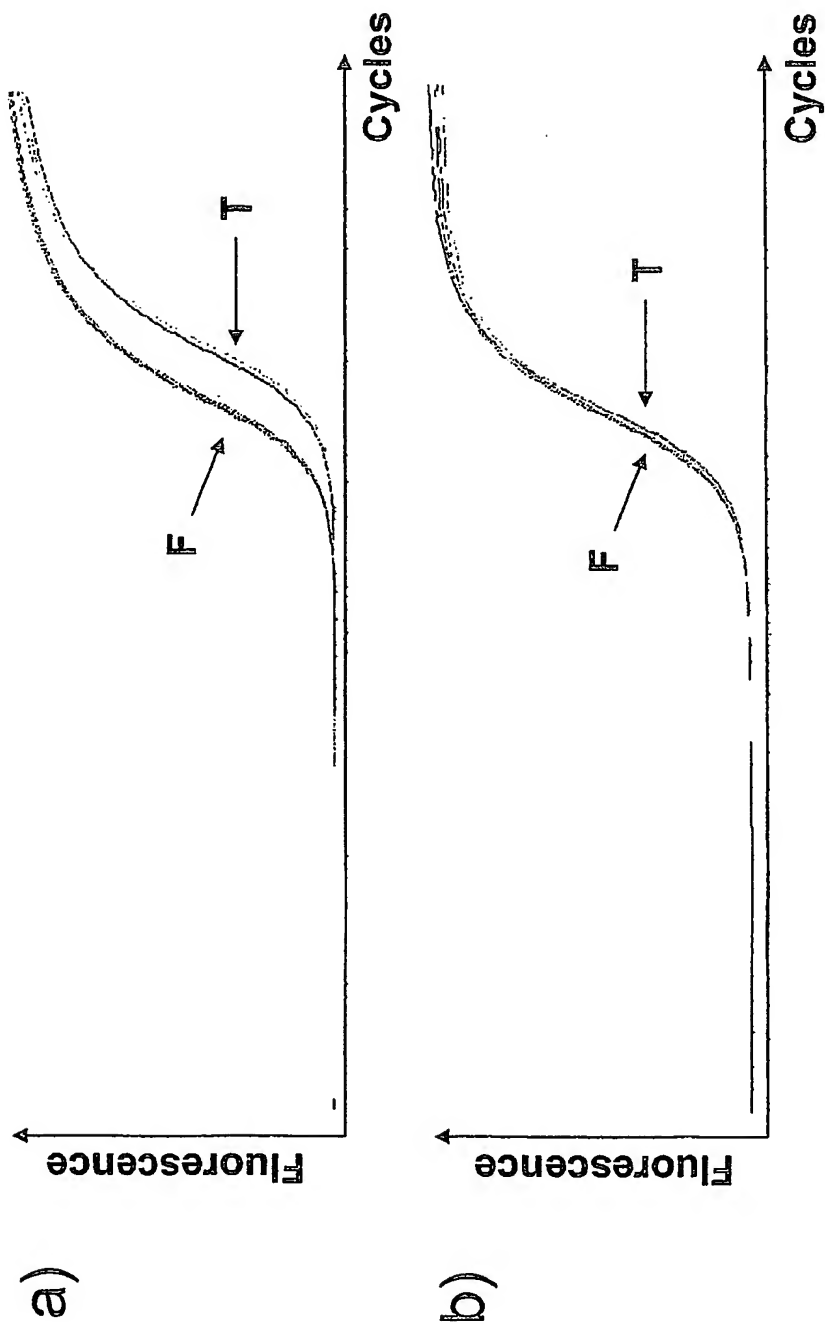


Fig. 3: Verification of differential expression of SULT4A1 splice variant 1 and/or splice variant 2 by quantitative RT-PCR



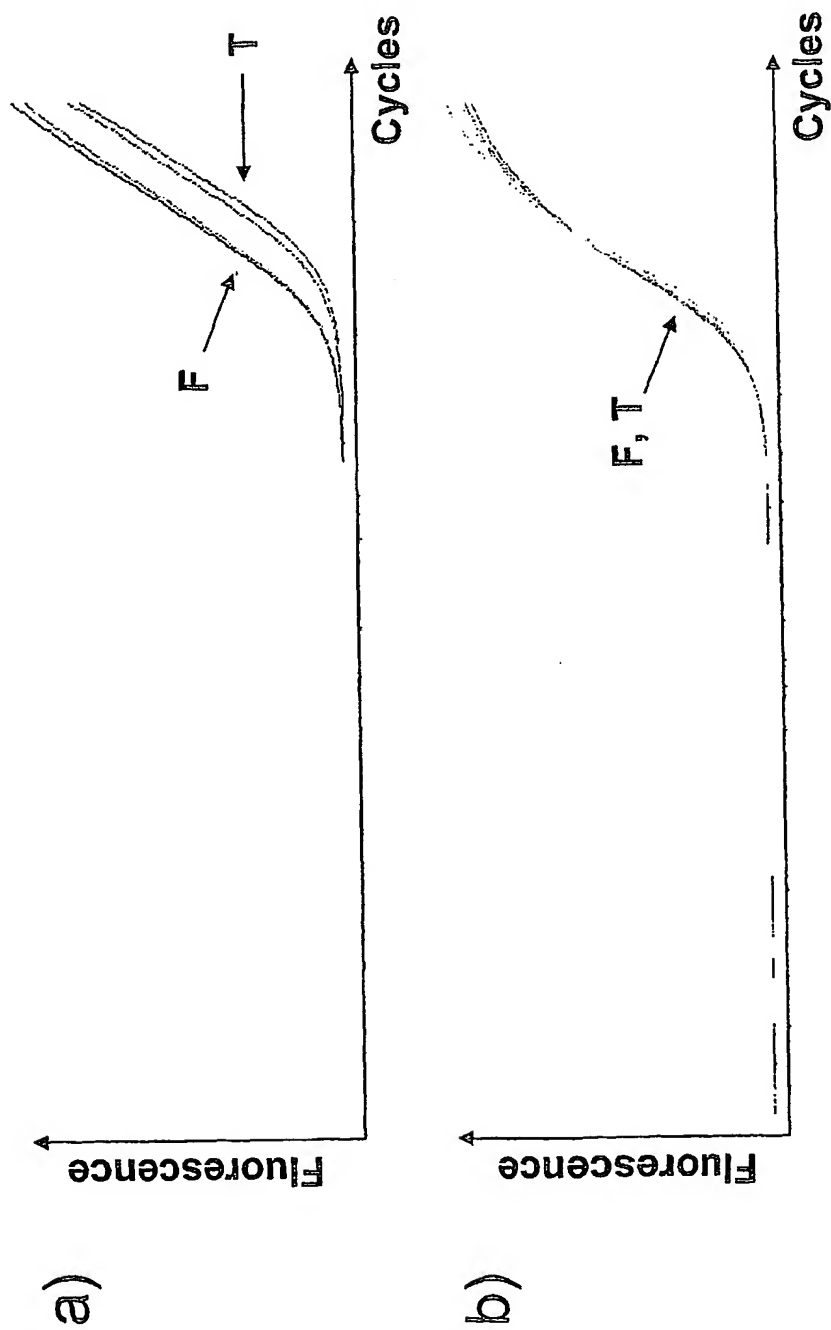
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Fig. 4: Verification of differential expression of SUL T4A1 splice variant 1 by quantitative RT-PCR



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Fig. 5: Verification of differential expression of SULT4A1 splice variant 2 by quantitative RT-PCR

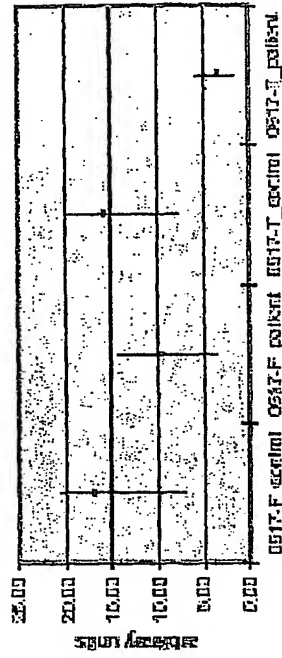


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Fig. 6: Analysis of absolute mRNA expression of SULT4A1sv1 and/or SULT4A1sv2

Comparison of Braak 0-2 with Braak 3-6

ens0617



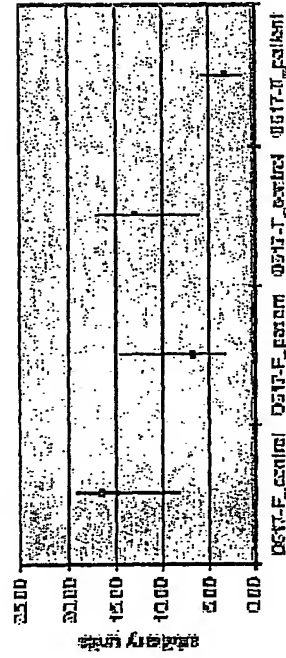
Comparison of Braak 0-1 with 2-3 and 4-6

ens0617



Comparison of Braak 0-3 with 4-6

ens0617



Comparison of Braak 0-1 with 2-6

ens0617

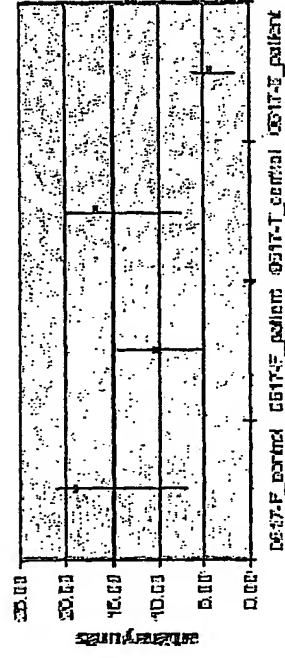


Fig. 7: Analysis of absolute mRNA expression of SULT4A1sv1

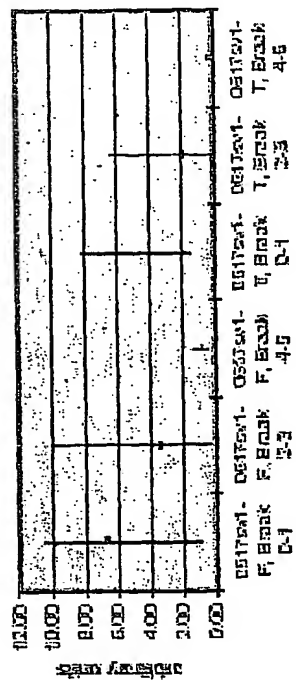
Comparison of Block 0-2 With Block 3-6

1-800-235-5555



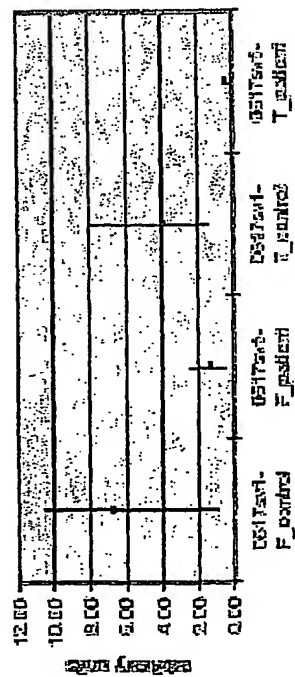
Comparison of Bank 0-1 with 2-3 and 4-5

உதவிக்கப்படுகிறது.



Competition of Break 0-1 with 2-0

എറണാകുളം



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**Fig. 8: SEQ ID NO. 1:
amino acid sequence of
human SULT4A1 protein,
splice variant 1**

Length: 284 aa

```
1  MAESEAETPS TPGEFESKYF EFHGVRLPPF CRGKMEEIAN FPVRPSDVWI
51  VTYPKSGTSL LQEVVYLVSQ GADPDEIGLM NIDEQLPVLE YPQPGLDIIK
101 ELTSPRLIKS HLPYRFLPSD LHNGDSKVIY MARNPKDLVV SYYQFHRS LR
151 TMSYRGTFQE FCRRFMNDKL GYGSWFEBVQ EFWEHRMDSN VLFLKYEDMH
201 RDLVTMVEQL ARFLGVSCDK AQLEALTEHC HQLVDQCCNA EALPVGRGRV
251 GLWKDIFTVS MNEKFDLVYK QKMGKCDLTF DFYL
```


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**Fig. 9: SEQ ID NO. 2:
amino acid sequence of human SULT4A1 protein,
splice variant 2**

Length: 171 aa

```
1  MAESEAETPS TPGEFESKYF EFHGVRLPPF CRGKMEEIAN FPVRPSDVWI
51  VTYPKSVGYG SWFEHVQEFW EHRMDSNVLF LKYEDMHRDL VTMVEQLARF
101 LGVSCDKAQL EALTEHCHQL VDQCCNAEAL PVGRGRVGLW KDIFTVSMNE
151 KFDLVYKQKM GKCDLTFDFY L
```

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Fig. 10: SEQ ID NO. 3:
nucleotide sequence of human SULT4A1 cDNA,
splice variant 1

Length: 2419 bp

```
1  GCGACGGCGA  CGGCGGCGGC  ATGGCGGAGA  GCGAGGCCGA  GACCCCCAGC
51  ACCCCGGGGG  AGTTCGAGAG  CAAGTACTTC  GAGTTCCATG  GCGTGGCGGT
101  GCGGCCCTTC  TGCCGCGGGA  AGATGGAGGA  GATCGCCAAC  TTCCCGGTGC
151  GGCCCAGCGA  CGTGTGGATC  GTCACCTACC  CCAAGTCCGG  CACCAGCTTG
201  CTGCAGGAGG  TGGTCTACTT  GGTGAGCCAG  GGCGCTGACC  CCGATGAGAT
251  CGGCTTGATG  AACATCGACG  AGCAGCTCCC  GGTCTTGGAG  TACCCACAGC
301  CGGGCCTGGA  CATCATCAAG  GAACTGACCT  CTCCCCGCCT  CATCAAGAGC
351  CACCTGCCCT  ACCGCTTTCT  GCCCTCTGAC  CTCCACAATG  GAGACTCCAA
401  GGTCACTAT  ATGGCTCGCA  ACCCAAGGA  TCTGGTGGTG  TCTTATTATC
451  AGTTCCACCG  CTCTCTGCGG  ACCATGAGCT  ACCGAGGCAC  CTTTCAAGAA
501  TTCTGCCGGA  GGTTFATGAA  TGATAAGCTG  GGCTACGGCT  CCTGGTTTGA
551  GCACGTGCAG  GAGTCTGCG  AGCACCAGCAT  GGACTCGAAC  GTGCTTTTTTC
601  TCAAGTATGA  AGACATGCAT  CGGGACCTGG  TGACGATGGT  GGAGCAGCTG
651  GCCAGATTCC  TGGGGGTGTC  CTGTGACAAG  GCCCAGCTGG  AAGCCCTGAC
701  GGAGCACTGC  CACCAGCTGG  TGGACCAGTG  CTGCAACGCT  GAGGCCCTGC
751  CCGTGGGCCG  GGGAGAGATT  GGGCTGTGGA  AGGACATCTT  CACCGTCTCC
801  ATGAATGAGA  AGTTTGACTT  GGTGTATAAA  CAGAAGATGG  GAAAGTGTGA
851  CCTCACGTTT  GACTTTTATT  TATAATAACA  GAAACAACAA  CCTGCATGCT
901  CACAATACCC  AGACAGTCTA  CTAGCCAAA  GTCCTGTATG  CATTCATTTA
951  TTCCTTGCTG  GACAACTCT  GGAAGCAGCG  TGTGAAACAG  CGGGGGAAGG
1001  GAAGAGCGGC  GTGAGCGGAG  GGAGTGTGAT  GATTCCCAAC  CGAAGCAGCT
1051  GTCTCGCCTT  TAGAACGTGC  AGCCTCTCCA  TGTCTGATTA  CAAACAGTCT
1101  CCACATTGCA  GTTCCAATGG  CCTGGACCGT  AAGGATAAAG  CCTGTAATAT
1151  ATGCAACTAG  AATGTCTGCC  TTTTCAACCC  CGTATTATTG  TATTTTATAG
1201  AGCTTTTCAC  TGGAAATCTA  CATAAATGTC  AGTAAACCAA  ATAAAAGTTC
1251  ATTTCCAAGG  GGAATCAGGA  GCGAGCCACA  CCCGAATGGT  AGAAAGATCT
1301  CAGGGTTAAC  TCTTTATTTT  TGTAGTTTTA  TTATCTAAGG  CACAGCCATT
1351  CTGTTCTCAC  TTGGTTCTGA  GATAGTGGTG  AGAACAGAGG  ATGAGTTGGG
1401  TCTGTTGGGG  GGAATCTGGA  CACTTGTTTA  TTCTGACGGA  GTTCACTTCT
1451  TCAGAACCTT  CCTGAAATGA  GCAGAAATTG  TTCACTAGGT  CTTCAGAAATG
1501  GACGTCCTTC  TGCCAGAGAC  TTCCAGCGGG  CGGCTCCAAA  GGCCCAATGC
1551  AGAGGAGCCC  GCGGAGCATG  TGCTGAGGGA  AGTCTGCCTG  GTGAGGCTGG
1601  CAGGTGGGAG  TCTAATGCAG  TCAGGAGCAT  TTGCATGCAG  TGGGTGGAGA
1651  GTCGGCCACC  AAAGGACCGA  GTTGCCTCG  GAATTTGAGC  TGAATTCAC
1701  AGCCTTACTT  TGTTTCCTGA  AGTGATAGCC  TACTAATGCT  GGCAAGCAGA
1751  TGCTTAATAG  TAAATTTCTA  AAATCCCCGG  GTCTTTATCA  TTCAGTTTGT
1801  TCTGTGCACC  TGAGGCGCTC  AGCCGTGGGA  GGACCATTTT  GCGAGTGTAG
1851  CCCTGTTTCA  CTCGGATCAG  GTTGGCACGG  CCGCCTGCGT  GTCTGTCCAC
1901  CTCATCCCTC  CGTGTATCTG  AGGGAGTAAA  GGTGAGGTCT  TTATTGCTTC
1951  ACTGCCTAAT  TTTCTCACCC  ACATTGCTG  AAGCGATGGA  GAGTCGGGGG
2001  CCAGTAGCCA  GCCAACCCCG  TGGGGACCGG  GGTGTGCTGT  CATTTATGTG
2051  GCTGGAAAGC  ACCCAAAGTG  GTGGTCAGGA  GGGTCGCTGC  TGTGGAAGGG
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2101 GTCTCCGTTT TTGGTGCTGT ATTTGAAACG GGTGTAGAGA GAAGCTTGTG
2151 TTTTGTGTTG TAATGGGGAG AAGCGTGGCC AGGCAGGTGG CACGTGGCAT
2201 CGCATGGTGG GCTCGGCAGC ACCTTGCCTG TGTTTCTGTG AGGGAGGCTG
2251 CTTTCTGTGA AATTTCATTT ATATTTTCT ATTTTATAGTA CTGTATGGAT
2301 GTTACTGAGC ACTACACATG ATCCTTCTGT GCTTGCTTGC ATCTTTAATA
2351 AAGACATGTT CCCGGCGTTG CAAAAAAAAA AAAAAAAAAA AAAAAAAAAA
2401 AAAAAAAAAA AAAAAAAAAA

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Fig. 11: SEQ ID NO. 4:
nucleotide sequence of human SULT4A1 cDNA,
splice variant 2

Length: 2080 bp

```
1  GCGACGGCGA CGGCGGCGGC ATGGCGGAGA GCGAGGCCGA GACCCCCAGC
51  ACCCCGGGGG AGTTCGAGAG CAAGTACTTC GAGTTCCATG GCGTGCGGCT
101 GCCGCCCTTC TGCCGCGGGA AGATGGAGGA GATCGCCAAC TTCCCGGTGC
151 GGCCAGCGCA CGTGTGGATC GTCACCTACC CCAAGTCCGT GGGCTACGGC
201 TCCTGGTTTG AGCACGTGCA GGAGTTCTGG GAGCACCGCA TGGACTCGAA
251 CGTGCTTTTT CTCAAGTATG AAGACATGCA TCGGGACCTG GTGACGATGG
301 TGGAGCAGCT GGCCAGATTC CTGGGGGTGT CCTGTGACAA GGCCAGCTG
351 GAAGCCCTGA CGGAGCACTG CCACCAGCTG GTGGACCAGT GCTGCAACGC
401 TGAGGCCCTG CCCGTGGGCC GGGGAAGAGT TGGCTGTGG AAGGACATCT
451 TCACCGTCTC CATGAATGAG AAGTTTGA CTGGTGATAA ACAGAAGATG
501 GGAAAGTGTG ACCTCACGTT TGACTTTTAT TTATAATAAC AGAAACAACA
551 ACCTGCATGC TCACAATACC CAGACAGTCT ACTAGCCAAA AGTCCTGTAT
601 GCATTCAATT ATTCTTGTCT GGACAAACTC TGGAAACAGC GTGTGAAACA
651 GCGGGGGAAG GGAAGAGCGG CGTGAGCGGA GGGAGTGTGA TGATCCCAA
701 CGGAAGCAGC TGTCTCGCCT TTAGAACGTG CAGCCTCTCC ATGTCTGATT
751 ACAAACAGTC TCCACATTGC AGTTCCAATG GCCTGGACCG TAAGGATAAA
801 GCCTGTAATA TATGCAACTA GAATGTCTGC CTTTCAACC CCGTATTATT
851 GTATTTTATA GAGCTTTTCA CTGGAATCT ACATAAATGT CAGTAAACCA
901 AATAAAAGTT CATTTCGAAG GGAATCAGG AGCGAGCCAC ACCCGAATGG
951 TAGAAAGATC TCAGGGTTAA CTCTTTATTT TTGTAGTTT ATTATCTAAG
1001 GCACAGCCAT TCTGTTCTCA CTTGGTTCTG AGATAGTGGT GAGAACAGAG
1051 GATGAGTTGG GTCTGTTGGG GGAATCTGG ACACTGTGTT ATTCTGACGG
1101 AGTTCAC TTCAGAACCT TCCTGAAATG AGCAGAAATT GTTCACTAGG
1151 TCTTCAGAAAT GGACGTCCTT CTGCCAGAGA CTTCCAGCGG GCGGCTCCAA
1201 AGGCCCAATG CAGAGGAGCC CGCGGAGCAT GTGCTGAGGG AAGTCTGCCT
1251 GGTGAGGCTG GCAGGTGGGA GTCTAATGCA GTCAGGAGCA TTTGCATGCA
1301 GTGGGTGGAG AGTCGGCCAC CAAAGGACCG AGTTGCGCTC GGAATTTGAG
1351 CTGAATTCCA CAGCCTTACT TTGTTTCTG AAGTGATAGC CTAATAATGC
1401 TGGCAAGCAG ATGCTTAATA GTAAATTTCT AAAATCCCCG GGTCTTTATC
1451 ATTCAGTTTG TTCTGTGCAC CTGAGGCGCT CAGCCGTGGG AGGACCATT
1501 TGCGAGTGTA GCCCTGTTTC ACTCGGATCA GGTGGCACG GCCGCCTGCG
1551 TGTCTGTCCA CCTCATCCCT CCGTGTATCT GAGGGAGTAA AGGTGAGGTC
1601 TTTATTGCTT CACTGCCTAA TTTTCTCACC CACATTCGCT GAAGCGATGG
1651 AGAGTCGGGG GCCAGTAGCC AGCCAACCCC GTGGGGACCG GGGTTGTCTG
1701 TCATTTATGT GGCTGGAAG CACCCAAAGT GGTGGTCAGG AGGGTCGCTG
1751 CTGTGGAAGG GGTCTCCGTT CTTGGTGCTG TATTTGAAAC GGGTGTAGAG
1801 AGAAGCTTGT GTTTTTGTTT GTAATGGGGA GAAGCGTGGC CAGGCAGGTG
1851 GCACGTGGCA TCGCATGGTG GGCTCGGCAG CACCTTGCCT GTGTTTCTGT
1901 GAGGGAGGCT GCTTTCTGTG AAATTTCAAT TATATTTTTC TATTTTATAGT
1951 ACTGTATGGA TGTTACTGAG CACTACACAT GATCCTTCTG TGCTTGCTTG
2001 CATCTTTAAT AAAGACATGT TCCCGGCGTT GCAAAAAAAA AAAAAAAA
2051 AAAAAAAA AAAAAAAA AAAAAAAA
```

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Fig. 12: SEQ ID NO. 5

Length: 32 bp

1 GATTGCATCT TTAATAAAGA CATGTTCCCG GC

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**Fig. 13: SEQ ID NO. 6: nucleotide
sequence of human SULT4A1 coding sequence**

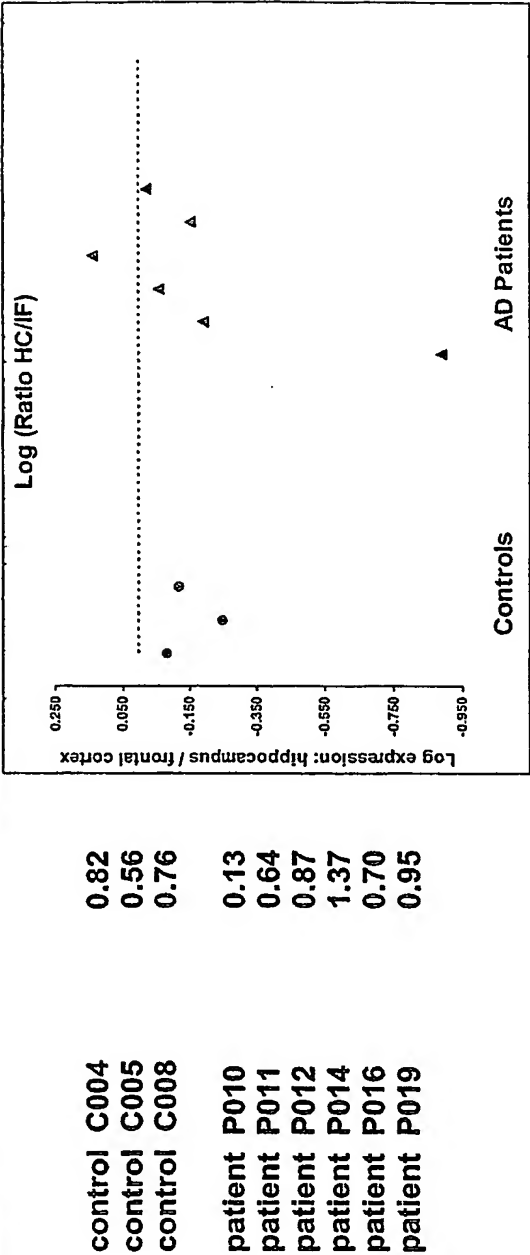
Length: 855 bp

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1  ATGGCGGAGA GCGAGGCCGA GACCCCCAGC ACCCGGGGG AGTTCGAGAG
51  CAAGTACTTC GAGTTCCATG GCGTGCGGCT GCCGCCCTTC TGCCGCGGGA
101 AGATGGAGGA GATCGCCAAC TTCCCGGTGC GGCCAGCGA CGTGTGGATC
151 GTCACCTACC CCAAGTCCGG CACCAGCTTG CTGCAGGAGG TGGTCTACTT
201 GGTGAGCCAG GGCGCTGACC CCGATGAGAT CGGCTTGATG AACATCGACG
251 AGCAGCTCCC GGTCCTGGAG TACCCACAGC CGGGCCTGGA CATCATCAAG
301 GAACTGACCT CTCCCCGCC TATCAAGAGC CACCTGCCCT ACCGCTTTCT
351 GCCCTCTGAC CTCCACAATG GAGACTCCA GGTCTCTAT ATGGCTCGCA
401 ACCCCAAGGA TCTGGTGGTG TCTTATTATC AGTTCCACCG CTCTCTGCGG
451 ACCATGAGCT ACCGAGGCAC CTTTCAAGAA TTCTGCCGGA GGTTTATGAA
501 TGATAAGCTG GGCTACGGCT CCTGGTTTGA GCACGTGCAG GAGTTCTGGG
551 AGCACCGCAT GGACTCGAAC GTGCTTTTTT TCAAGTATGA AGACATGCAT
601 CGGGACCTGG TGACGATGGT GGAGCAGCTG GCCAGATTCC TGGGGGTGTC
651 CTGTGACAAG GCCCAGCTGG AAGCCCTGAC GGAGCACTGC CACCAGCTGG
701 TGGACCAGTG CTGCAACGCT GAGGCCCTGC CCGTGGGCCG GGGAAGAGTT
751 GGGCTGTGGA AGGACATCTT CACCGTCTCC ATGAATGAGA AGTTTGACTT
801 GGTGTATAAA CAGAAGATGG GAAAGTGTGA CCTCACGTTT GACTTTTATT
851 TATAA
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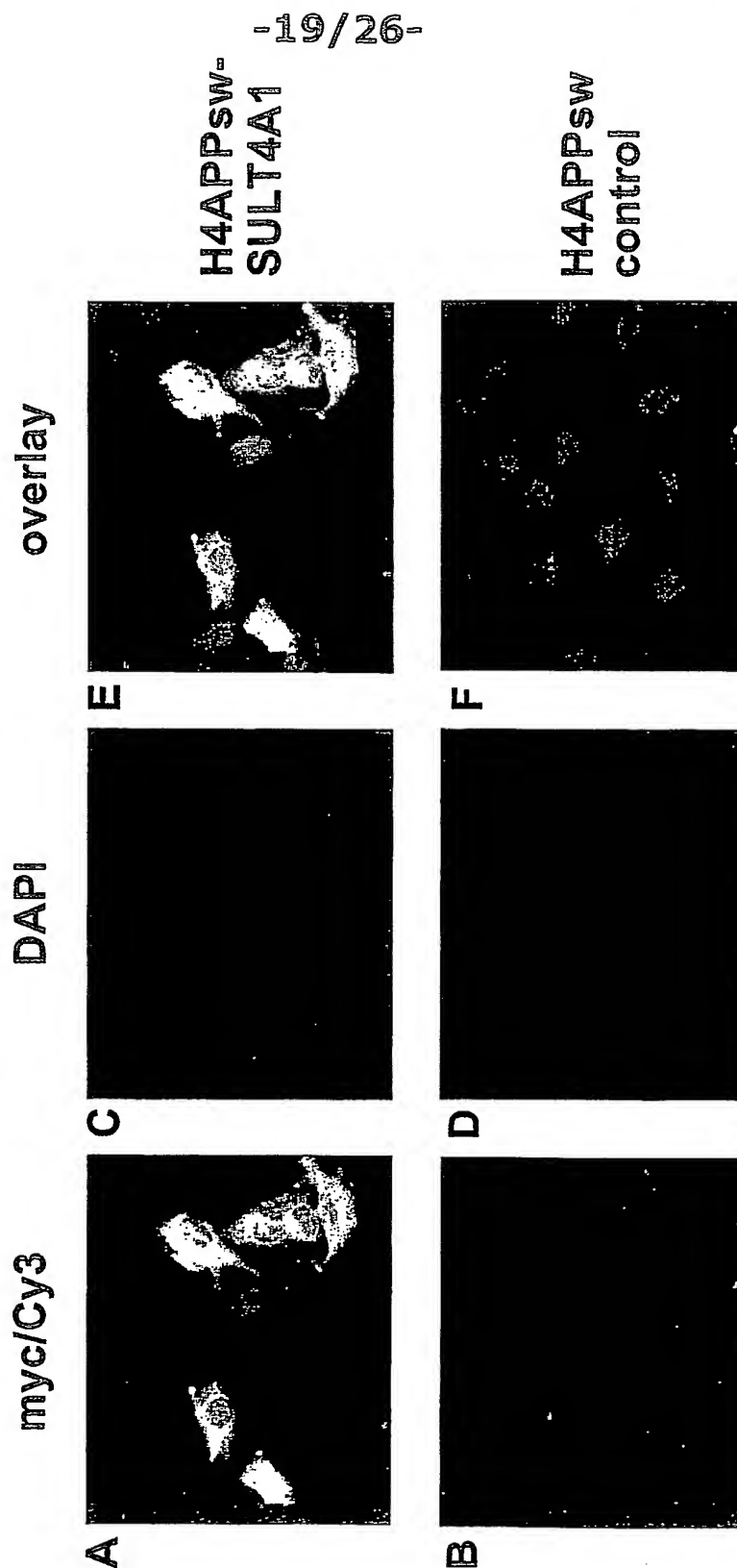
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Fig. 17 :

sample Δ (fold)
(hippocampus/ frontal cortex)



**Fig. 18: Immunofluorescence analysis of
SULT4A1 protein in neuroglioma cells**



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**Fig. 19: Effect of trophic factor deprivation on
SULT4A1 over-expressing cells**

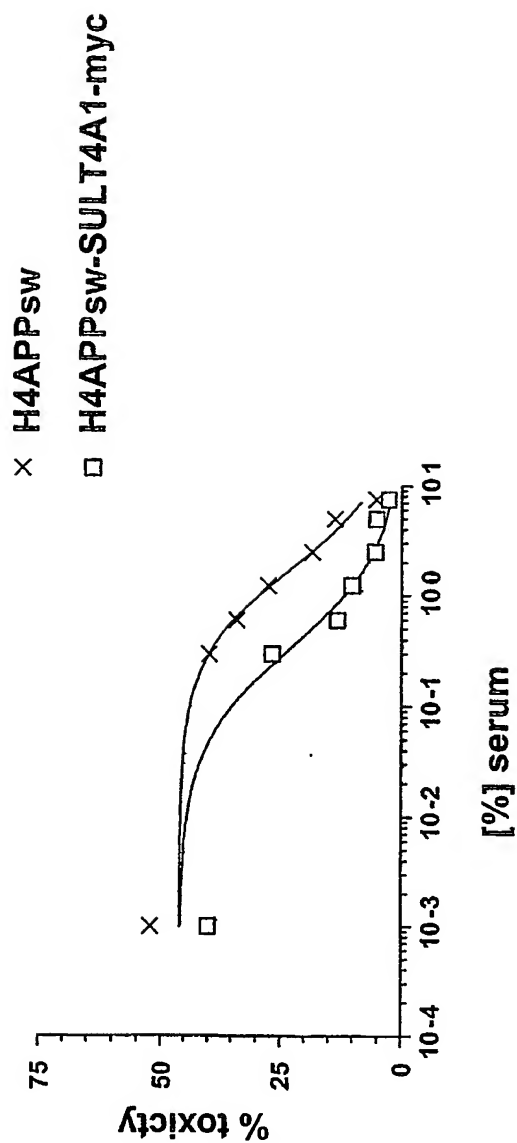


Fig. 20: Generation of Sult4A1 deficient mice

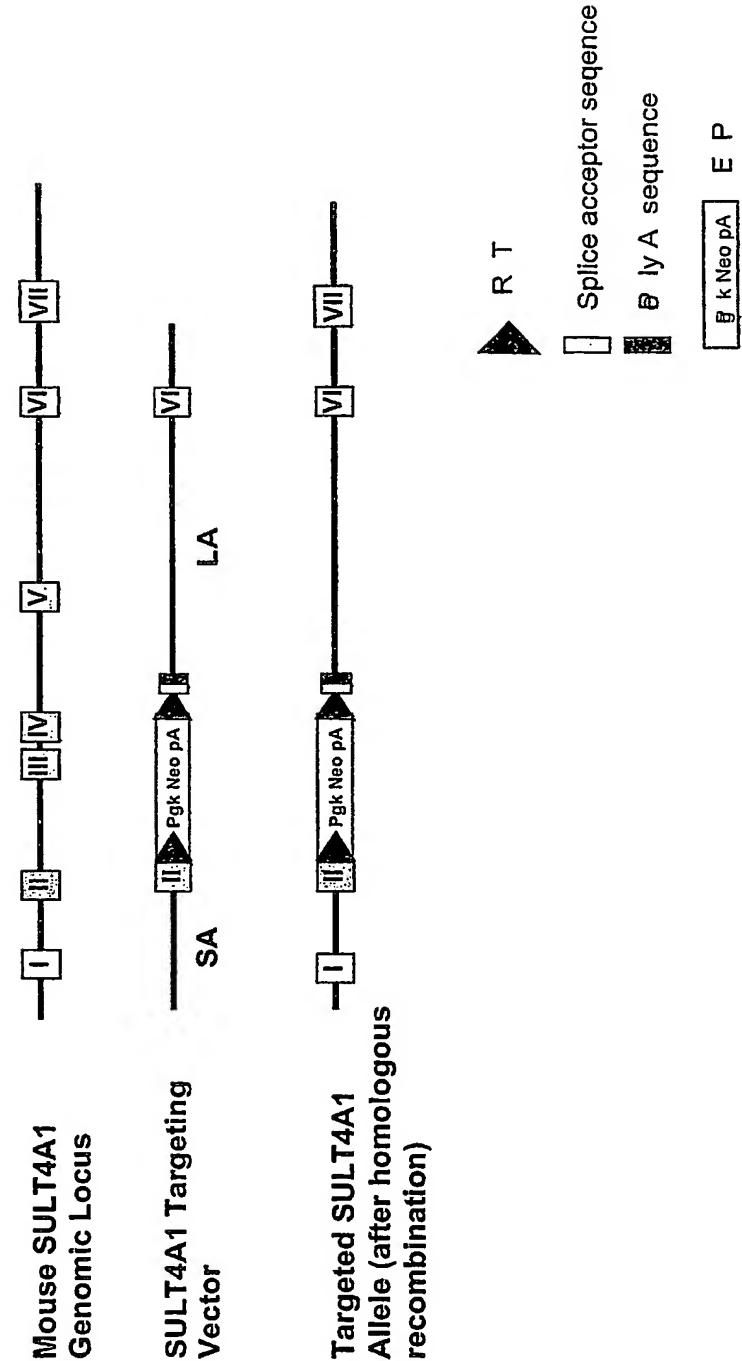
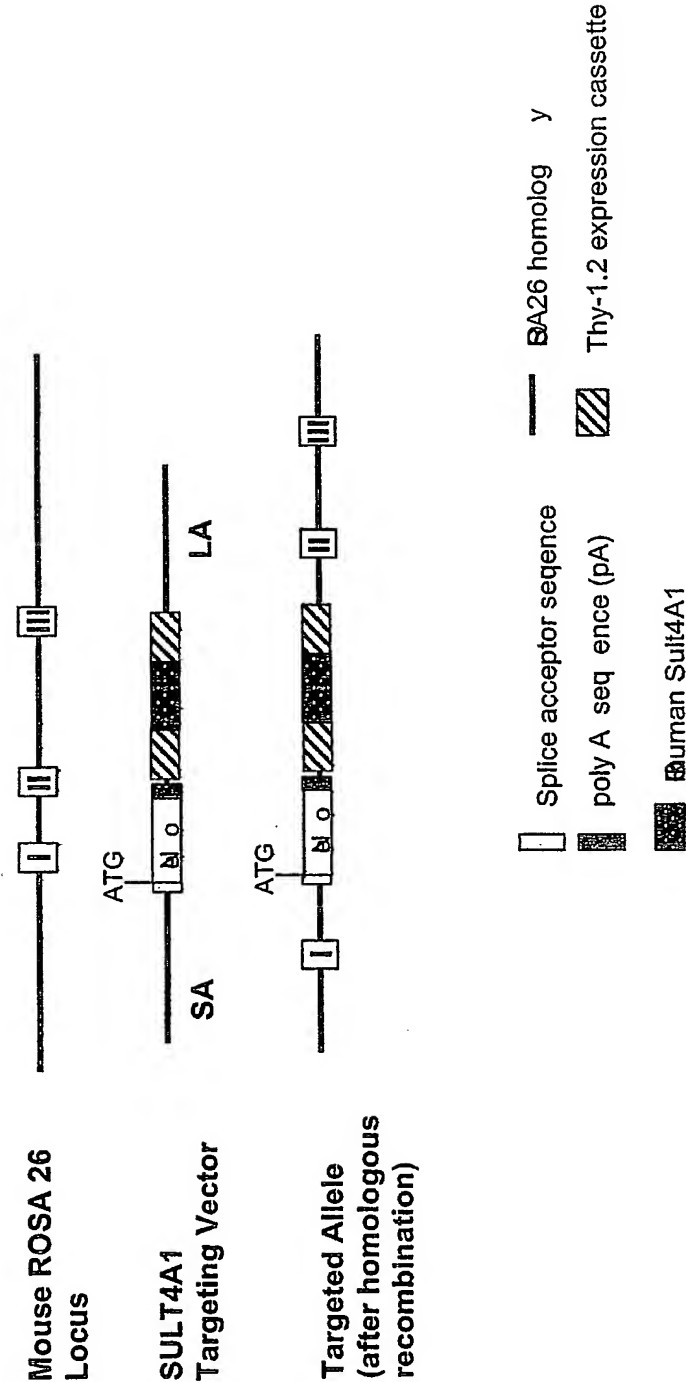
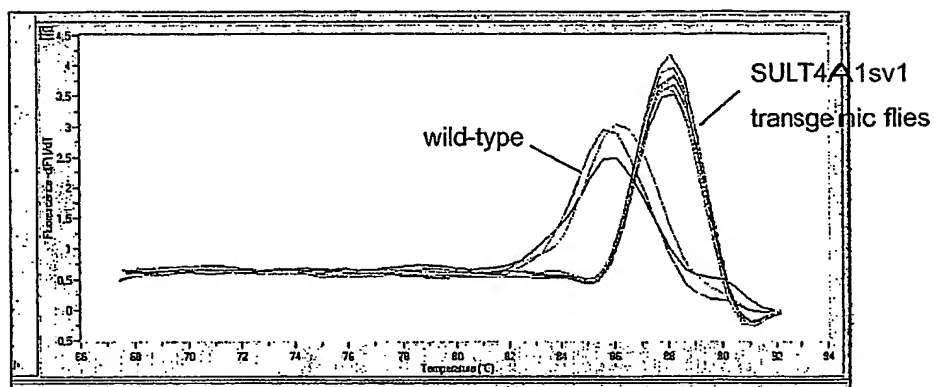


Fig. 21: Generation of Sult4A1 transgenic mice



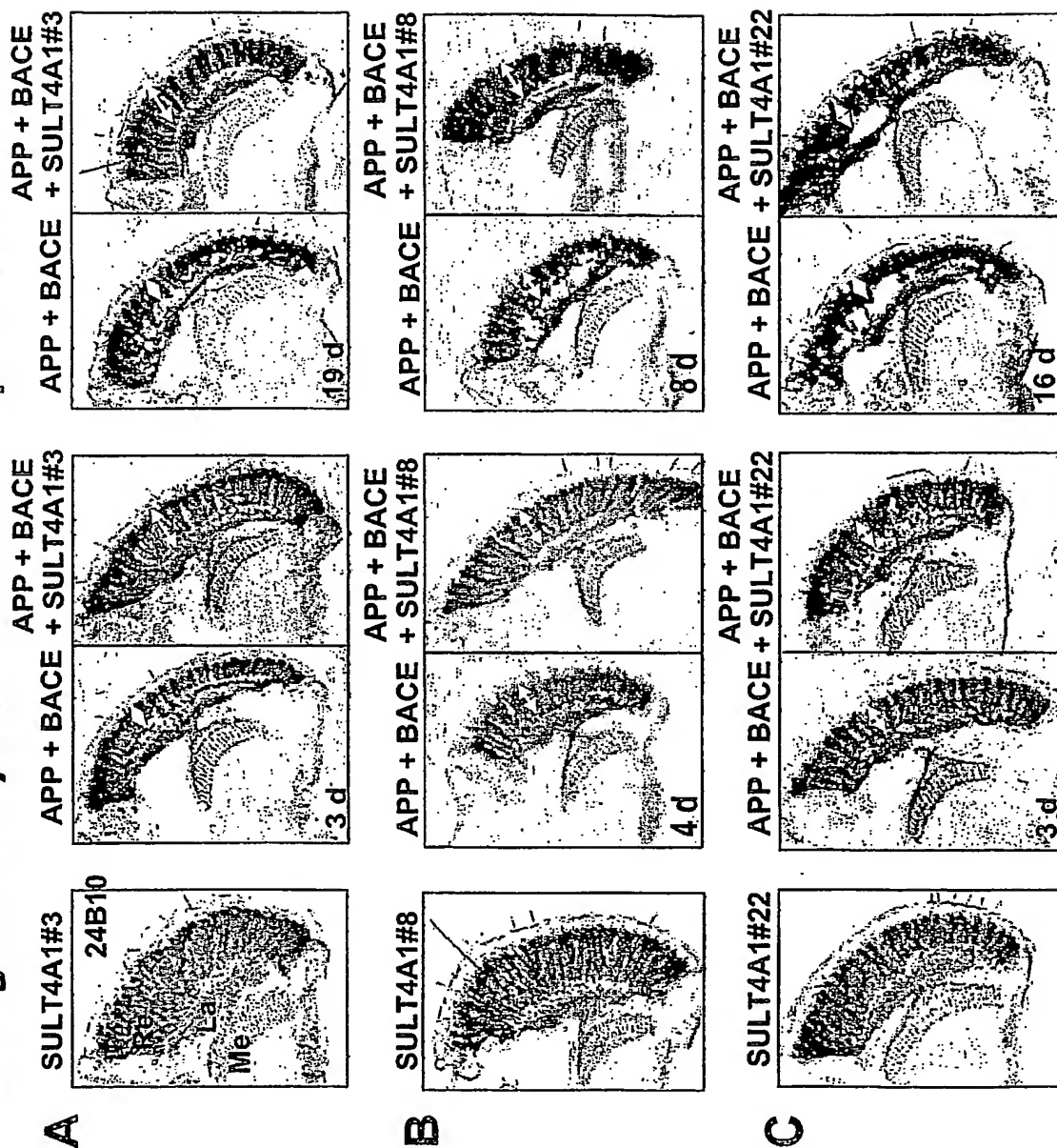
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Fig. 22: Transgenic expression of Sult4A1**A****B**

name	cycle number	mean	stdev	error [%]	efficiency (expression normalized to housekeeping gene)
SULT4A1#3	21.34	21.300	0.14422205	0.67709883	1.8 times more than SULT4A1#8; 2.7 times more than SULT4A1#22
SULT4A1#3	21.14				
SULT4A1#3	21.42				
SULT4A1#8	23.79	23.917	0.11676187	0.48820292	
SULT4A1#8	23.94				
SULT4A1#8	24.02				
SULT4A1#22		23.915	0.03535534	0.1478375	
SULT4A1#22	23.94				
SULT4A1#22	23.89				

$$E = 10^{(-1/\text{slope})} \quad \text{slope} = -2.960 \quad E = 2.176$$

Fig. 23: Histological analysis of Sult4A1 expression



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Fig. 24: Expression of full-length and processed hAPP in transgenic flies

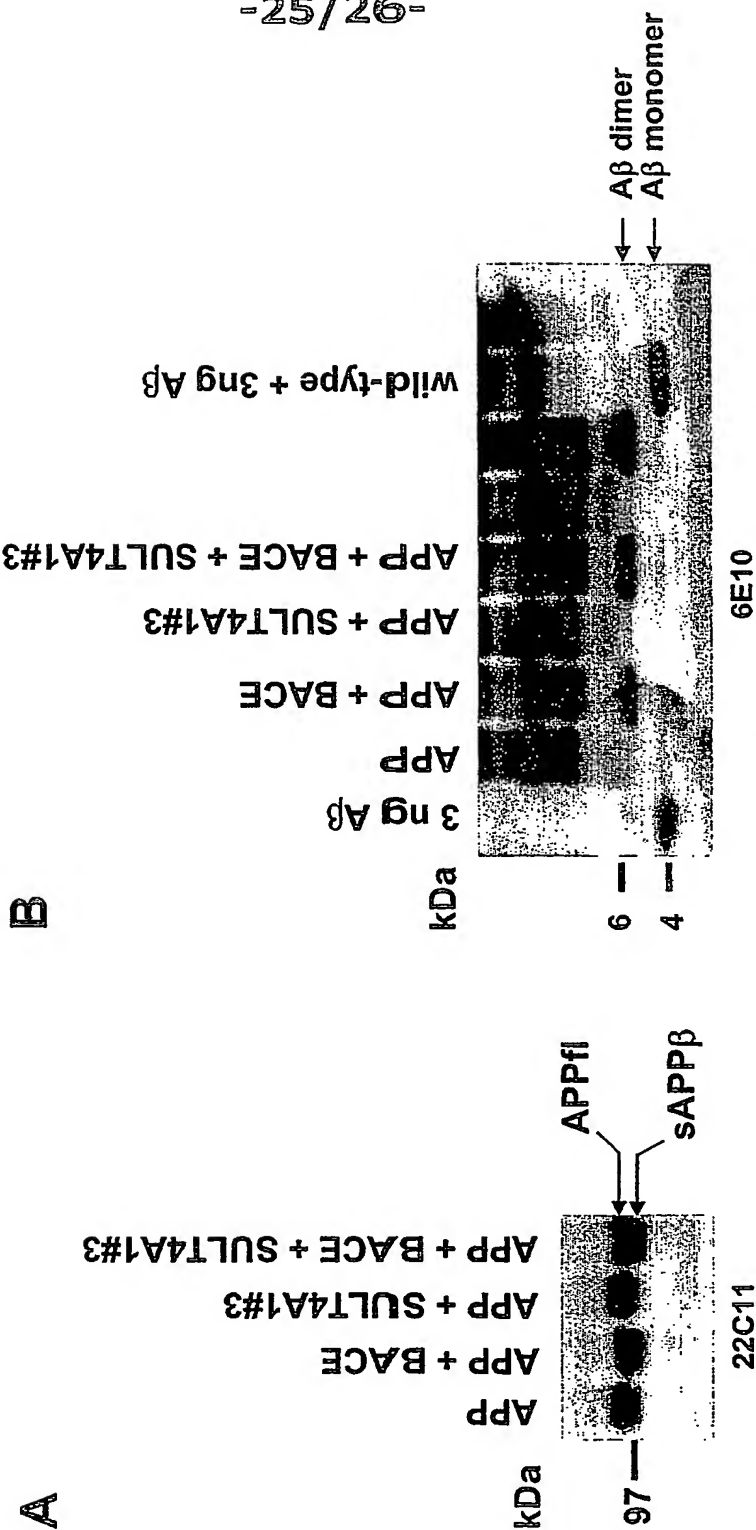


Fig. 25: Thioflavin S positive amyloid plaques in transgenic flies

